Process Manager and Run Control System* for the HERA-B

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Abstract

One of the main features of any run control system is the process control and monitor mechanizm. The process manager package (prcmanag) is supposed to fulfil these tasks.

*Preliminary version

Contents

1 Package features

The main features of the package are :

- all process information used by the prcmanag is stored in a data base;
- start-up and termination processes on request by means of process server (proserv);
- dinamic re-reading information from the data base;

2 Run Control Data Base and Process Manager

All information used by the prcmanag is stored in the DAQ data base.

The prcmanag operates with run configuration tables and related information for starting processes.

The process tree information is stored in levels. One level contains all the processes that should be started for it. Inside the levels the processes can be devided into groups (type of processes). Within each group a number of similar processes can be started.

The prcmanag can start either all the process at one level or each group individually depending on the client request. The prcmanag can also provide the client with the SMC information for the processes belonging to one level as well as with the mask of the components included in the run configuration.

The list of all run configurations in the data base can be provided by the prcmanag as well.

The termination of the processes can be carried out by the prcmanag only at the level basis.

3 DAQ data base

Some of the DAQ data base tables used by the prcmanag are given bellow. At the moment SHARC process are started by means of 'SCNRUN' program. In future the prcmanag will be able to do it by itself on the basis of the information from DAQ data base.

3.1 DAQ_RunCfg - run configuration table

Field name	Description	comments
name	Run configuration name	string[64]
ProcCfg	Process configuration	links to the tables DAQ_ProcCfg

3.2 DAQ_SMCCfg - SMC configuration table

Field name	Description	comments
name	SMC configuration name	string[64]
stt	state transition type	int
sdt	process state dependence table	string[256]
		always empty for TOP/BRANCH processes
gsdt	group state dependence table	string[256] can be empty for TOP/BRANCH processes
ProcCfg	Process configuration	links to the tables DAQ_ProcCfg

3.3 DAQ_ProcCfg - process configuration table

Field name	Description	comments
grname	Group name	string[64]
domain	RPM domain for the group of processes in the run	string[64]
name	RPM (basic) name for the group of processes in the run	string[64] superseds the same field in DAQ_ProcTemp
range	min and max number of processes to be started from the group	2 x int, currently only max is being used
env	environment variables for the processes	string[256] superseds the same field in DAQ_ProcTemp
args	online command arguments for the processes	string[256] superseds the same field in DAQ_ProcTemp
init	initialization script	string[64]
init_argc	online command arguments for the script	string[256]
external	external process flag	int; if set the process will be looked for first
critical	critical process flag	int; if process terminates and the flag 'restartable' is reset all the processes at the level will be killed
restart	restartable process flag	int; if set the process can be restarted if it terminates
RunCfg	run configuration	link to the table DAQ_RunCfg
ProcTemp	process template	link to the table DAQ_ProcTemp
SMCCfg	SMC configuration	link to the table DAQ_SMCCfg
NodeGrp	node group	link to the table DAQ_NodeGrp
Up	process configuration	link to the table DAQ_ProcCfg to the higher level group
Down	process configuration	link to the table DAQ_ProcCfg to the lower level group

3.4 DAQ_ProcTemp - process template table

Field name	Description	comments
type	process template type	string[64]
name	RPM (basic) name	string[64]
path	default path for the process	string[64]
exec	executable name for the process	string[64]
env	environment variables for the processes	string[256] superseds the same field in DAQ_ProcTemp
args	online command arguments for the processes	string[256] superseds the same field in DAQ_ProcTemp
UIup/UIdown	process user interface template	link to the table DAQ_ProcTemp; if UIup is set means that process has UI; if UIdown is set means that process is UI
restart	restartable process flag	int; (not used)
NodeGrp	default process node group	link to the table DAQ_NodeGrp
ProcCfg	process configuration	link to the table DAQ_ProcCfg to the higher level group

3.5 DAQ_NodeGrp - node group table

Field name	Description	comments
name	node group name	string[32]
type	node group type	string[32]
ProcCfg	Process configuration	links to the tables DAQ_ProcCfg
Node	Nodes	links to the tables DAQ_Node
ProcTemp	Process template	links to the tables DAQ_ProcTemp

3.6 DAQ_Node - nodes table

Field name	Description	comments
name	node name	string[32]
NodeGrp	Node group	links to the tables DAQ_NodeGrp
DSP_PC	DSP or PC	links to the either DAQ_Dsp or DAQ_PC table